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Apache students comprised approximately 85 percent of the total enrollment of the Fort Thomas, Arizona, school system. The goals of the 1965-68 Diverse Capacity Project conducted in the school system were (1) to understand cultural differences between Indians and Anglos, (2) to identify the problems of Indians in an Anglo-oriented school, (3) to modify the traditionally oriented textbook curriculum, and (4) to establish a satisfactory instructional organization to meet the needs of both children and teachers in the rural school setting. Teaching techniques such as a directed reading activity, a unit approach, and a non grading level organization were employed. The results were later evaluated with the use of achievement tests, which showed that Anglo achievement was significantly superior to Indian achievement. Some conclusions were: (1) teachers of non-achievers are more inclined to find fault with the instructional program than with the children; (2) schools must involve all teachers in curriculum planning and selection; and (3) instructional programs must have greater priority over organizational plans. Achievement and attendance data are included. (CM)

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FT. THOMAS SCHOOL SYSTEM

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EDUCATING APACHE
INDIAN CHILDREN
IN A
PUBLIC SCHOOL SYSTEM

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FINAL REPORT OF THE

FORT THOMAS DIVERSE CAPACITY

PROJECT

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June 1968

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I. INTRODUCTION

Fort Thomas is characteristic of a small rural incorporated hamlet. Its location geographically removes it from the major population centers of Arizona.

The total shcool population (K-12) is under 500 and the Fort Thomas School System graduates less than 25 students per year. Approximately 85 per cent of the students are Apache Indians who came from the San Carlos Reservation in Bylas, Arizona. These Indian children enter the first year of school with enthusiasm and a willingness to learn. They appear friendly, fun-loving and at eas in their new learning environment. However, after approximately three years of school these same children begin to evidence self-conscious behaviors and withdrawal tendencies. They appear less at ease in their learning environments.

This problem deeply concerned Mr. Eldon Randall, Superintendent of the Fort Thomas School System. During the Spring of 1965 he discussed this problem with Mr. John M. Zuchowski, Project Director for the Western States Small Schools Project, sponsored by the Ford Foundation. Mr. Zuchowski felt that this represented a significant opportunity for the Foundation because Fort Thomas is one of the few schools in the United States where all of the Indian students live on the Reservation and yet attend the local public school.

In the Fall of 1965, Dr. Nicholas J. Silvaroli, Director of the Reading Education Center at Arizona State University, Tempe, Arizona, was invited to participate in this newly formed Ford Foundation Project.

In the early stages of the Project, it was decided that the cause of the problem, posed by Mr. Randall, could not be traced to any one factor in either the school, the children or the community. Instead, it appeared that a constellation of factors tended to retard the enthusiasm and academic development of Indian students.

These beliefs led those involved to approach the problem from what is currently referred to as a systems approach. All the factors found in both the community and the school which impinge upon the learning of students, had to be considered in order to overcome the problem. Since it was financially impossible to deal with both the community and the school, it was decided to direct initial Project efforts on the more narrow aspect of the total problem: THE SCHOOL.

The goals established were:

1. The improvement of faculty understanding regarding the differences between Indian and Anglo cultures.

2. The identification of significant problems confronting the Indian in an Anglo-oriented school.

3. The modification of the traditionally oriented textbook curriculum.

4. The establishment of an instructional organization which is best suited to the needs of children and teachers in the Fort Thomas School System.

II. INSTRUCTIONAL PROGRAM 1965-66

To accomplish these "school oriented" goals a variety of instructional approaches were recommended.

Primary teachers were introduced to the teaching techniques called A Directed Reading Activity. This technique required teachers to assume greater responsibility during reading instruction They were urged to make fewer assumptions about the child's actual background of experience and language. We observed primary teachers taking great care to introduce or reinforce basic concepts. For example, a reading selection referred to a squeaky wheel; rather than assume that the children knew this concept, each child was given the opportunity to push a doll buggy to hear its wheel squeak. Considering the vast number of concepts included in each reading selection, one can appreciate the time required of the teacher to identify and plan for this type of background concept development.

Mrs. Brown developing concepts related to her Directed Reading lesson

Intermediate teachers were introduced to a Unit Approach to instruction rather than a total textbook program. Under this approach teachers and students were urged to identify areas of mutual interest. For example, themes such as the Gila Valley, the desert, the cattle industry, etc., were selected. Committees were formed to investigate various aspects of the overall theme and emphasis was placed on language and concept development.

The length of time for each Unit lasted between four and six weeks. Each intermediate teacher needed to gather useful resources and do considerable planning for this instructional approach.

Mrs. Hooper's class collected pictures and wrote stories about recent Field Trip to the Phoenix Zoo

Cross-visitation, after-school and classroom demonstrations, discussions, films and trips to other schools were provided for all elementary teachers.

A summer workshop (June 6-11, 1966) was held to improve faculty understandings regarding the differences between Indian and Anglo cultures. Mr. Josiah Moore, Coordinator, Papago Reservation, helped the teachers appreciate the difficulties confronting the Indian child attending a public school. The other objective of this workshop was to assist the teachers in the preparation of instructional materials.

A review of the first year's Project efforts, regarding instructional changes in the classroom, indicated that teachers were expected to make considerable changes. Much information was presented regarding what was necessary and why these changes were recommended, but how to put these changes into actual practice was left to each teacher. It soon became apparent that the degree and quality of change was related to degree and quality of professionalism on the part of each teacher. Also, specific changes outside

the classroom were essential in order to assist those teachers who were willing to change.

Under administrative leadership, a variety of state and federal funds were expended to assist classroom teachers and children in the following ways:

1. **Vitamin and Milk Program** Each child received daily, one pint of milk and vitamin pills which were prescribed by a local medical doctor.
2. **Art/Resource Teacher** Mrs. Purdy was employed to provide approximately 2 hours of art instruction to intermediate level children. Near the end of the year she ordered over $5,000 worth of instructional materials requested by teachers.
3. **Resource Center.** Plans were made to renovate a large classroom centrally located in the school plant.
4. **Psychological Service.** Of the total school population approximately 90 children were referred to Dr. Warren H. Wheelock for individual intelligence testing. These were done to identify children for a Special Education Class.
5. **Educable Mentally Handicapped Class.** Plans were made to build an EMH classroom and employ an EMH teacher. Mr. Floyd Baribeau, State Department of Public Instruction, assisted in the certification of the EMH teacher and provided information for procurement of special state funds.
6. **Teacher Aides.** Three teacher aides were employed to assist primary teachers during reading instruction.
7. **2 x 2 Slides.** Mr. Max Perkins, teacher, Mesa Elementary School District, Mesa, Arizona, assisted teachers in the preparation of 2x2 slides. The actual pictures of children and their activities greatly assisted classroom teachers to make instruction realistic.

III. INSTRUCTIONAL PROGRAM 1966-68

Since the instructional emphasis of the first year was centered on the more global aspects of teacher training and several areas related to the classroom program, it was decided to shift emphasis to specific instructional programs and overall school organization.

Specific instructional programs introduced were:

Creative Art in the Elementary School

Consultant: Mr. William Jamieson
Phoenix Elementary Dist. #1

Programed Reading

Behavioral Research Laboratories and
Webster Publishing Company

Mathematics "Cuisinaire Rods"

Cuisinaire Company of America
Consultant: Dr. George Schlinsog
Arizona State University
Tempe, Arizona

Language Experience Approach to Reading

Encyclopaedia Britannia Press
Consultant: Dr. R. Van Allen
University of Arizona
Tucson, Arizona

Visual and Auditory Discrimination Program

Learning Through Seeing, Inc.
Sunland, California

Frostig Visual Discrimination Training Program

Follett Publishing Company

Effective Phonic and Basal Reading Programs were in use at Fort Thomas. Therefore, the above programs were introduced and teachers were asked to consider each program's instructional potential. It was strongly recommended, by Dr. Silvaroli, that a variety of programs be made available and assistance for teachers be provided, but that **no teacher** be forced or required to use these programs. The choice of continuing the instructional program,

modifying the program, or completely adopting a different program was left to the professional judgment of the classroom teacher.

School Organization: The primary grades (K3) adopted a non-grade levels organization in 1962 and felt that it satisfied the needs of their instructional program. This organization is in use at the present time.

The intermediate grades (4-8) adopted a departmentalized organization and each teacher concentrated on one subject area. This organizational plan required considerable scheduling and tended to fragment the instructional program in the intermediate grades. Three of the five intermediate teachers were dissatisfied with this organization. After considerable discussion, it was decided to adopt a self-contained classroom organization beginning in September 1967. This organization has been widely accepted by teachers and administrators and is in use at the present time.

The Resource Center was developed and materials purchased during the first half of this three-year Project. However, Mrs. Purdy, the Art/Resource teacher, was spending almost full-time with the Art program. In September 1967, Mrs. Purdy was asked to equally divide her time between Art Instruction and the Resource Center. This pleased Mrs. Purdy and this arrangement is in use at the present time.

Mrs. Purdy developing Auditory Discrimination Ability with beginning readers

Mrs. June Brayford, Special Reading Teacher, functioned as a "remedial reading teacher." She worked with small groups of

Oral Expression Techniques have been developed by the Special Reading Teacher, Mrs. Brayford

disabled readers throughout each day, five days per week. Mrs. Brayford suggested that her role be changed so that she might serve as a consultant to classroom teachers. This shift, in role relationship, resulted in a significantly more effective special reading program in the school. Mrs. Brayford now works directly with both teachers and children. Mrs. Brayford and several teachers can show evidence of increased linguistic skills on the part of many Indian children. For example, Mrs. Brayford and Mrs. Brown (Primary) had presented several frames from the newly purchased Jimminy Cricket filmstrip. Each child in the room was asked to tell what they saw in the picture. Their oral expressions were recorded and analyzed. They selected children who could only make two-word responses and those that made errors in contractions. Informal programs were developed to correct these oral responses. In April, 1968, this same procedure was employed and these children were responding with sentences of approximatly ten words in lengeth.

Mr. Billy K. Hinton, Principal, elected to work with a group of high-achieving children in Mr. Stephens' class for one hour each day. This gave Mr. Stephens an opportunity to use the Cuisinaire Rods with a smaller group.

Students in Mr. Stevens class solving math problems using Cuisinaire Rods

Mr. Stan Johnson completely individualized instruction in his self-contained classroom. He used a variety of mechanical devices

(overheads, tape recorders, records, etc.) and several of the programs previously mentioned.

These are some of the examples of the school organization and adjusted role relationships changes that have been made at the Fort Thomas School during the final two years of the Diverse Capacity Project.

From the outset of this Project, the assumption was made that classroom teachers are the key factors in the school's instructional programs and that their professional judgments should determine instructional objectives. The two administrators in the school district accepted this assumption and did everything possible to encourage the professional teacher.

IV. EVALUATION

Achievement Testing

The Project was confronted with the problem of attempting to systematically evaluate academic achievement despite the fact that most of the children (85 per cent) have language and reading disability. They are generally average for their grade levels, but their experience is not consistent with the available achievement tests.

Near the end of the first year, May 1966, the **Lee Clark Reading Readiness Test**, the Upper Primary and Elementary Levels of the **California Achievement Test** were administered. During May 1967 and April 1968, identical testing procedures were conducted.

The results of the first round of testing, May 1966 indicated that with one minor exception Anglo achievement was significantly superior to Indian achievement for all three tests: **Lee Clark Reading Readiness** and the **California Upper Primary and Elementary** levels.

The only exception noted was on the **Lee Clark Reading Readiness Test**, Subtest 2, Crossing Out Letters. On this one subtest no significant difference was noted between Anglo and Indian achievement.

The results were not surprising when we considered the overall cultural advantages of the Anglo student.

Our basic purpose, in this form of evaluation, is to compare various Indian and Anglo achievements during the duration of the Diverse Capacity Project. Therefore, the May 1966 results served as a base line for the May 1967 and the April 1968 comparisons. Since there is no reason to believe that any significant changes in economic or cultural structure is likely to take place, in the near feuture, we are assuming that if any achievement difference is noted, the difference might be attributed to the efforts of the Fort Thams School Program.

The results of the **Lee Clark Reading Rediness Test**, and the California Upper Primary and Elementary Levels test made the following May 1966, May 1967 and April 1968 comparisons possible:

Indian vs. Anglo Achievement (Tables Ia, Ib, Ic)

Indian vs. Indian Achievement (Tables IIa, IIb, IIc)

Table Ia

Indian vs. Anglo Achievement: Lee Clark Reading Readiness Test

Subtest Totals	F-ratio May 1966	F-ratio May 1967	F-ratio April 1968
Letter Symbols	3.33 NS	.17 NS	.24 NS
Concepts	40.60**	20.17**	5.72*
Word Symbols	8.80**	11.88**	.94 NS
Total Readiness	18.89**	11.03**	2.23 NS

**p>.01; *p>.05 level; NS Not significant

While the scores tended toward less difference in 1967, as compared to 1966, the overall results in 1968 indicate no real significant difference in total reading readiness between Indian and Anglo achievement. These 1968 achievement results for readiness are interesting because we would not have expected Indian achievement to be comparable to Anglo achievement, at any level.

Table Ib

Indian vs. Anglo Achievement: California Upper Primary Test

Subtest Totals	F-ratio May 1966	F-ratio May 1967	F-ratio April 1968
Reading Vocabulary	26.56**	39.88**	22.23**
Reading Comprehension	75.19**	36.17**	26.74**
Arithmetic Reasoning	60.10**	28.33**	45.48**
Arithmetic Fundamentals	26.51**	22.29**	4.70*
Mechanics of English	41.63**	26.55**	42.65**
Spelling	5.60**	13.72**	23.48**
Total Battery	41.80**	35.49*	28.82**

**p> .01; *p> .05 level

There was no real change in achievement between these two groups. Anglo achievement in 1968 continued to be superior to Indian achievement.

Table Ic

Indian vs. Anglo Achievement: California Elementary Level

Subtest Totals	F-ratio May 1966	F-ratio May 1967	F-ratio April 1968
Reading Vocabulary	46.42**	58.96**	63.13**
Reading Comprehension	38.81*	43.40**	43.88**
Arithmetic Reasoning	14.87**	.51 NS	2.05 NS
Arithmetic Fundamentals	18.94**	16.06**	25.60**
Mechanics of English	18.94**	23.56**	4.66*
Spelling	6.15**	7.99**	.05 NS
Total Battery	27.00*	40.82*	35.05**

**p> .01; *p> .05 level; NS Not significant

There was no real change in 1968 achievement, except for two areas, arithmetic reasoning and spelling. In both areas Indian achievement was equal to Anglo achievement.

Table IIa

Indian vs. Indian Achievement: Lee-Clark Reading Readiness Test - May 1966 with April 1968:

Subtest Totals	F-ratio
Letter Symbols	1.62 NS
Concepts	10.36**
Word Symbols	3.97*
Total Readiness	6.39*

**p> .01; *p> .05 level; NS Not Significant

The results of Table IIa indicate that the Indian children enrolled in beginning primary classes have made significant gains in achievement over similar aged Indian children three years earlier.

Table IIb

Indian vs. Indian Achievement: California Upper Primary Test May 1966 with April 1968:

Subtest Totals	F-ratio
Reading Vocabulary	5.5*
Reading Comprehension	.36 NS
Arithmetic Reasoning	.17 NS
Arithmetic Fundamentals	6.56*
Mechanics of English	.01 NS
Spelling	.01 NS
Total Battery	2.54 NS

**p> .01; *p> .05 level; NS Not Significant

The results of Table IIb indicate that the Indian children enrolled in the remaining primary classes and approximately one intermediate class evidenced gains in the areas of Reading Vocabulary and Arithmetic Fundamentals when compared with similar aged Indian children in May 1966.

Table IIc

Indian vs. Indian Achievement: California Elementary Level Test - May 1966 with April 1968:

Subtest Total	F-ratio
Reading Vocabulary	2.80 NS
Reading Comprehension	2.07 NS
Arithmetic Reasoning	.77 NS
Arithmetic Fundamentals	1.00 NS
Mechanics of English	.01 NS
Spelling	.88 NS
Total Battery	.85 NS

NS Not Significant

The results of Table IIc indicate that the Indian children enrolled in the last four intermediate classes tended toward increased achievement; they did not make significant achievement gains when compared with the May 1966 group of Indian children.

Inspection of the data regarding academic achievement of students attending the Fort Thomas Elementary schools suggest that both Indian and Anglo children are improving academically. Indian children are making achievement gains without causing a decrease in achievement for Anglo students.

These results do not suggest that the Superintendent's goal, to maintain academic achievement of Indian children through the elementary school program, has, as yet, been reached. However, it is believed that the current mood of teachers to adjust curriculum to the needs of the children, the increased sophistication of Indian children and the overall atmosphere of the school will result in the realization of his goal before 1970.

V. Attendance

If the instructional programs are more meaningful and the milk and vitamins have provided more energy for students, shouldn't the Average Daily Attendance (ADA) improve? If the newer programs on the Reservation are causing Indian parents to become more involved in the education of their young, shouldn't the ADA improve? There are probably any number of reasons which might contribute to improved school attendance. Our concern here was to see if ADA in the elementary school did, in fact, improve.

Table IV presents the elementary school (grades 1 - 8) attendance data for the past six years.

Table IV

Elementary School attendance data for a six year period:

Year	Number of Children Enrolled	ADA	% of Attendance		3 Year Average
1963-64	296	214.3	72.4	)	
1963-64	296	214.3	72.4	)—	76.6%
1964-65	391	313.5	80.2	)	
1965-66	371	324.6	87.5*	)	
1966-67	340	297.7	87.5*	)—	87.8%
1967-68	354	313.6	88.5*	)	

*Diverse Capacity Project years.

The results of Table IV show a marked increase in the per cent of ADA during the Diverse Capacity Project years. The three years prior to the Project, (1962-65), averaged an ADA of 76.6% of attendance. Using this as a base we find that the ADA for the elementary school has increased 11.2 per cent during the three years of the Diverse Capacity Project.

It is unrealistic to suggest that any single factor is responsible for this significant increase in the elementary school attendance. It is interesting to note, however, this increase in attendance correlates with the Diverse Capacity Project at Fort Thomas.

VI. SUMMARY AND CONCLUSIONS

1. GOAL: The improvement of faculty understandings regarding the differences between Indian and Anglo cultures.

After three years of effort which had taken the form of demonstrations, lectures, readings, informal conversations and on-site visits to other schools, individual teachers seem relatively unchanged in their understanding regarding the differences between Indian and Anglo cultures. Those secure teachers who had the human capacity to help others, became involved in the above-mentioned experiences and seemed to profit from them. Those who were not secure, tended to find ways to reject new information and found it psychologically easier to cling to established bias.

Within the present structure of the American school, regardless of the type of school, it appears almost impossible to change human behavior in the affective domain. Therefore, instructional leaders must continue to search for teachers who posses the understandings necessary to teach all children.

2. GOAL: The identification of significant problems confronting the Indian in an Anglo-oriented school.

The primary problem confronting Indian children seems to be their limited experience and understanding of a culture other than their own. The problem becomes confounded when these children are expected to communicate and acquire the information of this different culture, as present in the curriculum of the public school. Teachers at Fort Thomas have accepted the fact that the curriculum must be adjusted to meet the needs of these children. Many schools make claims regarding adjusted curriculums but Fort Thomas has actually brought this about.

Indian children are being taught to communicate in English. Field trips and activities, based on concrete experiences are a normal part of their curriculum. Teachers do not assume that the child has certain background information or concepts; they constantly check to be sure each child understands before going into new material. Children are instructionally passed at reasonable rates. Teachers are realistic in their assessment of what the child can actually do. For example, artificial grade level standards are not set in advance; each child is given adequate time to acquire the skills and understandings of the school.

It is believed that if a child at the Fort Thomas Elementary School is not achieving, teachers are initially inclined to find fault with the instructional program and not the child.

3. GOAL: The modification of the traditionally-oriented textbook curriculum.

During the first year of the Diverse Capacity Project, Directed Reading Activities, Units of Instruction and other instructional approcahes were recommended to modify the practice of using a standard textbook as a base of instruction for all children. In the second year more programs were recommended in the areas of reading, math, art, etc. There was little evidence that these recommendations were being accepted until teachers were convinced that they were recommendations and not mandates from administrators and cosultants. In the final year of the Project each teacher began selecting various instructional programs and adapting them to suit their needs and children's needs. Each teacher had to become personally involved with an instructional approach of his choosing, before it became apparent that such an approach was effective with children. As soon as the teacher was involved, concern for individuals, daily plannning, record keeping, pacing instruction, etc., seemed to follow naturally.

It seems reasonable to assume that teachers must be allowed to participate in curriculum planning and selection. The greatest change in teacher behavior and curriculum at Fort Thomas was noted after each teacher selected his own instructional approaches. If schols are sincere in their desire to change the textbook-oriented curriculum then they must be willing to find ways to involve all teachers in curriculum planning and selection.

4. GOAL: The establishment of an instructional organization which is best suited to the needs of children and teachers in the Fort Thomas School System.

Administrators and teachers at Fort Thomas have accepted the fact that instructional programs must have greater priority over organizational plans. They are convinced that it is not productive to set up an organizational plan and then attempt to "fit" a program to it.

Teachers requested a self-contained organization after they began to adjust their curriculum. They felt that the self-contained classroom organization gave them the time necessary to develop the instructional programs which they select-

ed. Under this plan it was easier to arrange field trips and provide children with actual experiences.

It is believed that the Fort Thomas Elementary School has made significant changes during the past three years. While it is obvious that these are new facilities, i.e., resource center, new instructional materials, and a new organizational plan, these are not believed to be the significant changes. The desire to find new ways to realistically improve the total curriculum is viewed as the most significant change.

Each teacher is involved in attempts to adopt instructional approaches to help all children.

An Indian advisory board has been created to bring the school and community closer together. Plans are underway to employ a full-time Counselor to work with children, techers and the local community at Bylas and Fort Thomas. Programs for the "Follow-Through" Program, ESEA Title I and Bilingual Education Act ESEA Title VII are now being developed.

Finally, the significant changes noted in the school, coupled with the changes underway on the Apache Indian Reservation, at Bylas, should eventually solve the educational delimma for Indian children attending Fort Thomas Elementary School. The question now left unanswered is . . . how long will it take?